

What is claimed is:

1. An apparatus for producing the sequence of terahertz electromagnetic pulses by a driven particle beam comprising an initial electromagnetic beam (em-beam) sent to a metal-dielectric structure whereby said em-beam partially transforms into a delayed electromagnetic wave, and a beam of charged particles (cp-beam) is sent to said structure whereby the particles' kinetic energy partially transforms into energy of the delayed electromagnetic wave having the same phase-frequency's characteristics as transformed field of em-beam.